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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/957,464	09/21/2001	Uzi Ram	003955.00021	3812

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EXAMINER	
RAMAKRISHNAIAH, MELUR	
ART UNIT	**PAPER NUMBER**
2643	

DATE MAILED: 07/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/957,464	RAM, UZI	
	Examiner	Art Unit	
	Melur Ramakrishnaiah	2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 June 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Specification

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. 112, first paragraph, as failing to provide an enabling disclosure.

Claim Rejections - 35 USC § 112

2. Claims 1-2, 9, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 1 and 2 all recite the limitation: multiple terminals generate signals using one of one-dimensional ALOHA and two-dimensional ALOHA access scheme and claim 9 recite the limitation: signals being generated using a one of a one-dimensional ALOHA and two-dimensional ALOHA access scheme. There is hardly any explanation or elaboration of what these terms mean other than a brief reference in summary, paragraph (06) which discloses the following: The OFDMA scheme may also be employed in conjunction with two-dimensional ALOHA based schemes where data slots are based on both time and frequency. This hardly gives much explanation about the one-dimensional ALOHA and two-dimensional ALOHA access scheme.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-2, and 9, are rejected under 35 U.S.C. 103(a) as being unpatentable over Breynaert et al. (EP 0930744 A1, hereinafter Breynaert) in view of Choudhury et al (Diversity ALOHA, a random access scheme for Satellite communications, Volume 31, Issue:3, ISSN:0096-2244, Pub date: March 1983, hereinafter Choudhury)

Regarding claim 1 Breynaert discloses a method of a satellite communication system comprising: coordinating multiple terminals (2-7, fig. 4) in a satellite network such that symbol timing of each of the multiple terminals in the satellite network are synchronized (page 5 lines 31-34), configuring frequency separation for each of the multiple terminals to obtain near orthogonality at the reception between a desired demodulated channel and transmission on neighboring channels (paragraphs: 0017, 0026-0028).

Regarding claim 2, Breynaert discloses the following: in an orthogonal frequency division multiplexed satellite system , a method comprising establishing symbol synchronization between multiple remote terminals utilizing a central clock recovered from a reference down stream channel output from a satellite (paragraph: 0036).

Regarding claim 9, Breynaert discloses an apparatus comprising a hub (9, fig. 5) including one or more antennas, RF receivers, modulators, demodulators, clocks, and

digital signal processors (not shown), the hub being configured to receive signals using OFDM scheme and transmit timing information to a plurality of remote terminals (2, 7, figs. 4-5) based on a timing synchronization feedback/acknowledgement loop (paragraphs: 0026-0028, 0036).

Breynaert differs from claims 1, 2, and 9 in that he does not teach the following: multiple terminals generate signals under one of a one-dimensional ALOHA and two-dimensional ALOHA access scheme.

However, Choudhury discloses diversity ALOHA sceme which uses a random access ALOHA scheme based on both frequency diversity and time diversity (page 451, cols. 1-2, see first paragraph under the heading frequency diversity, page 454, see first paragraph under heading time diversity).

Thus, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify Breynaert's system to provide for the following: multiple terminals generate signals under one of a one-dimensional ALOHA and two-dimensional ALOHA access scheme as this arrangement would facilitate to obtain better throughput as taught by Choudhury (see conclusion), thus facilitating greater efficiency in satellite communication system.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 3-6, 8, 10, 11, 12-13, 14-15, are rejected under 35 U.S.C 102(b) as being anticipated by Breynaert.

Regarding claim 3, Breynaert discloses a method comprising satellite location information which relates slight movement of satellites to a plurality of terminals employing orthogonal frequency division multiple access (page 6 lines 20-24, page 7: paragraph: 0034).

Regarding claim 8, Breynaert discloses an apparatus comprising a hub (9, figs. 4-5) including one or more antennas, RF transceivers, modulators (31, fig. 8), demodulators, clocks, and digital signal processors, the hub being configured to receive signals using OFDMA scheme and transmit timing information to a plurality of remote terminals based on satellite location information (paragraphs: 0029, 0034-0036).

Regarding claim 10, Breynaert discloses an apparatus comprising a hub one or more antennas (50, fig. 8) , RF transceivers, modulators (31, fig. 8), demodulators, clocks, and digital signal processors, the hub being configured to receive signals using an OFDMA scheme and to transmit information related to synchronization of plurality of remote terminals (2-7, figs. 4-5), the information relating to both synchronization feedback/acknowledgement loops and satellite location information (paragraphs: 0029, 0034-0036).

Regarding claim 11, Breynaert discloses the following: in an orthogonal frequency division multiplexed satellite system using multiple satellites (page 7 lines 15-20), a method comprising establishing symbol synchronization between various remote

terminals (2-7, fig. 4) by utilizing a reference clock coordinated by the multiple satellites to the remote terminals (paragraphs: 0033-0036).

Regarding claim 12, Breynaert discloses a method of operating a satellite communication system comprising: providing multiple terminals in a satellite network with satellite location information relating to movement of satellites around nominal locations so that timing of transmissions may be corrected on a tracking algorithm for detecting movement of satellites (page 7 lines 13-18, paragraph:0033).

Regarding claim 14, Breynaert discloses the following: in an orthogonal frequency division multiplexed satellite system, a method comprising establishing synchronization between multiple remote terminal utilizing a central clock utilizing individual timing correction loop (paragraph: 0033).

Regarding claims 4-7, 13, 15, Breynaert further teaches the following: satellite location information is utilized by plurality of remote terminals to correct timing with individual timing correction to each of the remote terminals, satellite information relates to single axis of the satellite, satellite location information is distance of the satellite from the hub (paragraphs: 0033-0034), satellite location information is an absolute location (page 6 lines 21-24), tracking algorithm is accomplished with individual timing correction of transmissions to each of the multiple terminals (paragraph: 0034), hub may enforce global timing synchronization by sending individual timing correction requests and receiving acknowledgments to each individual terminal to determine necessary timing corrections (paragraphs: 0033, 0036).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melur Ramakrishnaiah whose telephone number is (703) 305-1461. The examiner can normally be reached on M-F 6:30-4:00; every other F Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (703)305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Melur. Ramakrishnaiah

Melur Ramakrishnaiah
Primary Examiner
Art Unit 2643